

THE FERNS AND FERN ALLIES OF CHIHUAHUA.<sup>1</sup>. — This attractively prepared volume merits special attention for it is the first comprehensive modern treatment of the rich pteridophyte flora of Mexico. The authors have both collected extensively in the state of Chihuahua, with the particular purpose of augmenting the previous collections and phyto-geographic knowledge. Together, they have collected all but 18 of the species. They are to be congratulated on the thoroughness of their work and the accurate presentation of their results.

Although 120 species are known from Chihuahua, and an additional 6 from adjacent areas are treated, the authors recognize that the fern flora is still incompletely known. Additional species will be discovered as collecting continues in many less accessible areas, especially the isolated mesic barrancas of the western Sierra Madre Occidental. However, the basic explorations have been completed. The authors are to be commended in bringing out their work at this time so that it may fill a long-standing need.

The introduction surveys the collecting activities in the state of Chihuahua, the vegetation, geology, physiography, climate and the ecology and distribution of the pteridophytes. There is also a discussion of the typical structure and life-history of ferns, their cultivation and economic uses. A list of the known chromosome numbers of Chihuahuan species is a useful supplement. The principal text presents the pertinent nomenclature, a careful and complete description and the ecology and distribution of the 138 taxa recognized. Each species is illustrated; a number of them adequately for the first time. Keys are provided as an aid in identification and these, in combination with the excellent illustrations and the frequent discussions of characters make the book one of unusual utility. The appendix is devoted to comments on the species to be expected in Chihuahua, a

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<sup>1</sup>Ferns and Fern Allies of Chihuahua, Mexico, by Irving W. Knobloch and Donovan S. Correll (illustrated by Phoebejane Horning and Jane Roller) i-xiv, 1-198, t. 1-57. (Contrib. Texas Res. Found. vol 3) Texas Research Foundation, Renner, Texas. 1962. \$10.00.



gazetteer, a glossary of terms, a bibliography and an index. The gazetteer will be useful to many botanists concerned with the location of often obscure place-names in Chihuahua.

From my own point of view, it is refreshing that the classification adopted is a highly realistic one. I refer particularly to the recognition of the *Polypodiaceae* in the broad sense, to the generic treatment of the Cheilanthoid ferns and to the use of the category variety (rather than species) for important but subordinate taxa. Such practice is a departure from the tendency of many authors to accept, uncritically, some of the more recent but unsubstantiated views on classification.

The pteridophyte flora of Chihuahua, as one expects, is primarily a xeric one. This is emphasized by the predominance of the genera characteristic of arid lands in the Americas. *Cheilanthes* is represented by 23 species, *Notholaena* by 15, *Selaginella* by 11 xeric ones and *Pellaea* by 9. The truly mesic element consists of about 12 species and it is confined to the barrancas of the Sierra Madre Occidental. This is a tropical element which mostly reaches its northwestern limit in Chihuahua. Representative species of this element are: *Dennstaedtia distenta*, *Trichomanes radicans*, *Hymenophyllum tunbridgense*, *Adiantum Poiretii*, *Thelypteris rudis* and *Dryopteris parallelogramma*. This book will be useful for a considerably larger area than the single state it covers. Fifty-nine of the species also occur in southern California, Arizona or New Mexico and 110 of them occur elsewhere in Mexico. Of these, 85 extend southward to central Mexico and 61 to southern Mexico or beyond. Eleven species are known in Mexico only from Chihuahua. Five of these are endemic and the remainder occur in the United States.

THE FERNS AND FERN ALLIES OF CHIHUAHUA is an authoritative treatment and it can be recommended to all botanists with an interest in ferns or with a broader interest in the flora of arid regions. It will also be an important reference for those concerned with any portion of the flora of Mexico or the southwestern United States. — ROLLA M. TRYON, GRAY HERBARIUM, HARVARD UNIVERSITY.